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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NAJJAR, SALEH

ART UNIT

PAPER NUMBER

2154

DATE MAILED: 11/27/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/267,563

Applicant(s)

WANG ET AL.

Examiner

Saleh Najjar

Art Unit

2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 March 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-20, 22-24 and 26 is/are rejected.
- 7) ☐ Claim(s) 7, 8 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3-5, 7-10
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

1. This action is responsive to the preliminary amendment filed on March 12, 1999. Claims 1-26 are pending. Claims 1-26 represent method and computer program for media coding for loss recovery with remotely predicted data units.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-6, 9-13, 14-20, 22-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Astle, U.S. Patent No. 5,835,149 (previously submitted by the applicant as prior art).

Astle teaches the invention substantially as claimed including a computer implemented method and apparatus for encoding video pictures or a sequence of video pictures (see abstract).

As to claim 1 Astle teaches a method for coding streaming media comprising a series of picture frames, the method comprising:

classifying each of the pictures frames in the series as one of the following types of encoded data units: an independent picture, a predicted picture frame, and a remotely predicted picture frame, such that the picture frames in the series are organized into segments, and each segment has an independent picture frame, two or more predicted picture frames and at least one remotely predicted picture frame,

wherein the independent picture frame is a video recovery point and a random access point in the series of picture frames, and the remotely predicted picture frame is a video recovery point in the series of picture frames that is classified independently from the random access point and is coded with more efficiency than the independent picture frame (see figs. 5-6; col. 8, Astle teaches picture frames to be transmitted are coded as intrapicture I frame, predicted picture P, and bidirectional picture B frame);

encoding each of the picture frames classified as an independent picture frame in a compressed format using only information from the picture frame (see col. 8, Astle teaches that intrapictures are encoded (see col. 8);

encoding each of the picture frames classified as a predicted picture in a compressed format by encoding differences between the picture frame and the immediately preceding picture frame in the series (see col. 8); and

encoding each of the picture frames classified as a remotely predicted picture in a compressed format by encoding differences between the picture frame and the picture classified as the independent picture in the segment (see col. 8, Astle teaches that a bidirectional predicted picture frame is predicted based in differences of the intrapicture frame).

Astle does not explicitly teach the claimed limitation of a data unit. Astle references the frames of a video as picture frames (see col. 7-8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Astle by specifying the picture frame as a data unit since the same functionality is achieved.

As to claim 2, Astle teaches the method of claim 1 above, including:

encoding the series of data units (pictures) as a sequence of encoded data units comprising contiguous segments, each contiguous segment starting with an encoded independent data unit, followed by predicted units that are each dependent on the immediately preceding data unit, and including at least one remotely predicted unit inserted within a sequence of the predicted units (pictures) (see figs. 1-6; col. 8);

wherein the classifying step is performed dynamically while previously classified and encoded data units are being transmitted (see fig. 4; col. 11, Astle teaches that pictures I P and B are encoded dynamically).

As to claim 3, Astle teaches the method of claim 2 above, wherein the classifying step includes dynamically selecting a spacing of remotely predicted units in each of the contiguous segments as the encoded data units are being transmitted (see fig. 4; col. 11-13, Astle teaches that a rate controller is fed into the encoder which controls the bit rate by varying the quantization level representing the spacing and frequency of occurrence of I P and B pictures).

As to claims 4-6, Astle teaches the method of claim 3 above, wherein the spacing of remotely predicted units is determined dynamically based on a priority/data rate and measure of data loss detected in the previously transmitted frame (see figs. 1-7; col. 15-22).

As to claims 9-10, Astle teaches the method of claim 1 above wherein the data units are video/audio frames (see col. 7-8).

As to claim 11, Astle teaches a computer program product having instructions for performing the steps of claim 1 above (see col. 7-15).

Claims 12-13 add the claimed limitation of a decoder for performing decoding of the video data transmitted (see figs. 2-3; col. 7-8, Astle teaches a decoder for performing the decoding of I P and B frames).

As to claim 26, Astle teaches the method of claim 12 above wherein the remotely predicted units form a first level of remotely predicted units, the encoded bit stream includes the first and a second level of remotely predicted units, and the second level of remotely predicted units includes at least one second level remotely predicted unit that is predicted from a remotely predicted unit in the first level; and the method

includes:

decoding the second level remotely predicted unit by decoding differences between the second-level remotely predicted unit and the remotely predicted unit in the first level (see col. 17-18).

Claims 14-20, and 22-23 do not teach or define any new limitations above claims 1-6, 9-13, 26 and therefore are rejected for similar reasons.

Claims 7-8, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**4. Claim 25 is allowed Claim allowed.**

The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach or define singly or in combination the claimed limitation of "prioritizing encoded data units for transmission such that they are transmitted with highest priority, remotely predicted data units are sent with the next highest priority, and the predicted units are transmitted with lowest priority" as in claim 25.

**5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.**

- Hybrid hierarchical/full search MPEG encoder motion estimation by Maturi et al., U.S. Patent No. 5,731,850.
- Method and apparatus for video-on-demand with fast play capability by Lev et al., U.S. Patent No. 6,057,832.

**6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saleh Najjar whose telephone number is (703) 308-7613. The examiner can normally be reached on Monday-Friday from 6:30 to 3:00.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

Serial No. 009/267,563  
Art Unit 2154

6

supervisor, AN MENG AI, can be reached on (703) 305-9678. The fax phone number for this Group is (703) 308-9052.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-9600. The fax number for the After-Final correspondence/amendment is (703) 746-7238. The fax number for official correspondence/amendment is (703) 746-7239. The fax number for Non-official draft correspondence/amendment is (703) 746-7240.

A handwritten signature in black ink, appearing to read 'Saleh Najjar', written in a cursive style.

Saleh Najjar  
Examiner Art Unit 2154